

Puget Sound Energy - Energize Eastside Conditional Use Permit, City of Newcastle

Description of Proposal – “Newcastle Segment”

Puget Sound Energy, Inc. (PSE) proposes to upgrade approximately 1.5 miles of two existing 115 kV transmission lines in the city of Newcastle (“City” or “Newcastle”) with 230 kV transmission lines (Project). The Project is part of the Energize Eastside Project, which involves the construction of a new substation in the city of Bellevue (Bellevue) and an upgrade of an additional 16.5 miles of transmission lines in the cities of Bellevue, Redmond, and Renton, and unincorporated King County. The new substation and upgraded lines are needed to address electrical system deficiencies identified during federally-required planning studies. Combined with aggressive conservation, the Energize Eastside Project significantly improves reliability for Eastside communities, including the City, and will supply the additional electrical capacity needed for current and anticipated growth.

The existing electrical system is not robust enough to maintain reliable service if the entire facility is taken out of service at one time. Therefore, the Energize Eastside Project will be constructed in two phases. This will allow PSE to keep the existing 115 kV facilities partially in service during construction, which will ensure the maintenance of reliable service to customers. This approach best ensures that PSE continues to deliver reliable electricity to all of PSE’s customers during construction. This Conditional Use Permit (CUP) application proposes the construction of a 1.5 mile segment in the City as part of PSE’s first phase of construction. The Project’s second phase will be permitted and constructed outside of Newcastle’s city limits at a later date. PSE’s first phase includes the following components:

- **Within the City**, approximately 1.5 miles of existing 115 kV transmission lines will be upgraded to 230 kV transmission lines. The upgrade is located entirely within PSE’s existing 100-foot electrical transmission utility corridor. Upgrading requires replacing 22 existing wood H-frame poles and two triple-pole structures (50 poles) with 24 steel monopoles. After deliberate review and extensive stakeholder input, PSE proposes to undertake this work in the existing transmission line corridor rather than siting a new corridor through Newcastle communities. Within the existing utility corridor, the proposed pole locations for the rebuilt lines will generally be in the same locations as the existing poles (typically about 600 feet apart). Operation of the corridor will require selective tree removal within the corridor to meet federal vegetation management requirements and PSE standards. Use of the existing corridor (which has housed transmission lines since the 1920s and 30s) minimizes environmental impacts and impacts to adjacent uses to the fullest extent feasible.
- **Outside of the City**, the Project proposes to construct the new Richards Creek 230 kV to 115 kV substation in Bellevue and to upgrade an additional 7.3 miles of existing 115 kV lines with 230 kV lines between the new Richard Creek substation in Bellevue and Talbot Hill substation in Renton.

Newcastle's municipal code (NMC) requires a CUP for the Project because the proposed Project is a Utility facility - Regional (NMC 18.06.689), which is a "Conditional Use" in all zones under Permitted Uses (NMC 18.08), Business Services and Land Uses (NMC 18.08.06). Thus, the Project is an allowed use subject to the conditional use review procedures and applicable development conditions, which are additional criteria and requirements of regional utility facilities. This document describes the Project's compliance with decision criteria for a CUP (NMC 18.44.50) as well as compliance with criteria for utility facility - regional (NMC 18.44.052).

Decision Criteria for CUP (NMC 18.44.50)

The following section demonstrates the Project's compliance with the City's six Conditional Use Decision Criteria (NMC 18.44.50). These criteria are listed in the CUP Application in the same order in which they appear in Newcastle's code:

- A. *The conditional use is designed in a manner which is compatible with the character and appearance with the existing or proposed development in the vicinity of the subject property;*

Response: The Energize Eastside Project is designed to be compatible with the existing character and appearance of development in the Project vicinity. The proposed upgraded transmission lines are located in an existing utility corridor, where existing land uses are predominantly vacant (59%). Non-vacant land uses are primarily single-family residential uses that are located adjacent to the existing transmission lines. Approximately 112 parcels are immediately adjacent to the existing corridor. The Project, as designed, will not change the use of these parcels. Unique land uses include Newcastle City Hall, Seattle Revival Center, and May Creek Park (on the Newcastle/Renton border). The Newcastle segment goes through the residential neighborhoods of Del Mar Village, Newport Woods, Eden's Grove, Donegal, and Olympus. A portion of the segment also goes through the Community Business Center – Lake Boren Corridor, and is within the Community Business Center overlay. Del Mar Village is an apartment complex near a commercial center. Donegal and Olympus are single-family residential developments. A government building and a park (May Creek Natural Area) are along the segment.

PSE designed the Project to use the existing transmission line corridor that was established in the late 1920s and early 1930s, which predates the incorporation of Newcastle (1994). The current uses adjacent to the corridor developed over time as areas were annexed into the City and these areas became more dense and populated. The utility corridor is part of the existing character of these areas. By selecting this route through Newcastle, PSE limits new impacts and ensures consistency with the existing uses, which already accommodate a utility corridor.

PSE's proposed transmission line upgrade design involves replacing the existing H-frame wood 115 kV transmission poles (which has two or three poles at each location) with steel monopoles to accommodate 230 kV conductors (e.g., wires). The replacement poles will generally be installed in the same location or in close proximity to the existing poles. This

design provides a more than a 50% reduction in transmission poles within the corridor. The reduction in poles reduces aesthetic impacts to adjacent uses by eliminating visual clutter.

PSE's proposed pole design is taller than the existing poles, but reduces height to the extent feasible. PSE's proposed average pole height is well below the height evaluated in the State Environmental Policy Act (SEPA) Phase I and Phase 2 Draft Environmental Impact Statements (DEIS) (82 feet rather than 100 feet).¹ This reduction mitigates aesthetic impacts concluded in the Phase 2 DEIS to a level that is less than significant. This is consistent with the Phase 2 DEIS's recommendation of shorter poles as a potential mitigation measure. Phase 2 DEIS at 3.2-87 ("Position poles and adjust pole height to minimize impacts to the greatest extent possible. In Newcastle, a variance from the setback requirements would allow the poles to be positioned farther away from the houses. This would also allow for shorter poles.").

This reduced height would require issuance of a variance from the City to allow the proposed poles to be located within 5 feet of the Olympic Pipeline Company (OPL) easement. With the variance, the new poles would also have a smaller diameter and could be installed using direct embed construction techniques rather than having to place the poles on foundations. Direct embed construction has a lower ground disturbance footprint than when foundations are required. Additionally, poles installed on foundations require more than an extra month of construction time as compared to the embedded method.

PSE will also work with the City to assess various pole finishes (e.g., galvanized, Corten [self-weathering], painted) to limit impacts to adjacent uses. This design decision was recommended mitigation in the Phase 2 DEIS at 3.2-88. To facilitate 'gateway' visual appeal near the City Hall, PSE modified its design by moving a pole from its originally designed location to a point farther from the roadway. PSE will work with the City and property owners to identify preferred species of replacement vegetation, with a focus on native species, so as to enhance adjacent uses to the extent possible.

The Newcastle Comprehensive Plan land use designations within this portion of the study area include Single-Family Residential and Multi-Family Residential. This indicates that the neighborhoods will continue to have residential land uses along the existing corridor into the foreseeable future. The policies specific to the Newcastle Comprehensive Plan indicate intent to preserve the current residential character while providing for concentrated growth where necessary (HO-P2 and LU-P13²). The consistency of the proposed transmission lines with other uses in the vicinity was confirmed by the Phase 2 DEIS, which concluded that "the potential impacts to land use and housing for the Newcastle Segment would be less-than-significant because it is consistent with city plans, and would not adversely affect existing and future land use patterns." Phase 2 DEIS, Section 3.1.5.14 at page 3.1-42-43. All potential SEPA impacts must be assessed against the existing transmission line and the existing property rights granted with the establishment of the utility corridor. See, *Chuckanut*

¹ The Phase I and Phase II DEISs are available at <http://www.energizeeastsideeis.org/library.html>.

² See Newcastle 2035 Comprehensive Plan, March 2016.

Conservancy v. Washington State Department of Natural Resources, 156 Wn. App. 274, 292-93, 232, P.3d 1154,1163 (2010).

The City's Comprehensive Plan also minimizes compatibility impacts by requiring that compatible utilities be co-located:

LU-G13. The City *shall identify* lands useful for public purposes such as utility and transportation corridors, landfills, sewage treatment facilities, storm water management facilities, recreation, schools, and other public uses. (emphasis added).

UT-P3. The City *shall promote collocation* of major utility transmission facilities such as high voltage electrical transmission lines and water and natural gas trunk pipe lines within shared utility corridors, to minimize the amount of land allocated for this purpose and the tendency of such corridors to divide neighborhoods. (emphasis added).

Consistent with these Comprehensive Plan provisions, PSE proposes utilizing the existing high voltage transmission line corridor, which is co-located with nature gas lines.

- B. *The location, size and height of buildings, structures, walls and fences, and screening vegetation for the conditional use shall not hinder neighborhood circulation or discourage the permitted development or use of neighboring properties;*

Response: The proposed transmission line upgrade will not hinder neighborhood circulation or discourage the permitted development or use of neighboring properties. PSE proposes siting the transmission line upgrades along the same corridor used by existing transmission lines in Newcastle. This corridor has been established for almost a century. Because adjacent land uses and properties already integrate the transmission lines, the upgraded transmission lines will not cause new or additional disruption of neighborhood circulation or discourage permitted development or use of neighboring properties. Also, the transmission line upgrade does not require the construction of walls, fences or screening vegetation, which further ensures that the existing uses and circulation will not be disrupted.

PSE has worked diligently at each pole location to solicit community and property owner feedback on pole design, reduce the height of all poles to the extent technically feasible and safe, and to move pole location when requested and feasible. PSE's engineers have had significant success advancing these goals. For example, proposed pole height above ground level in the Newcastle segment would be reduced from an average of 100 feet (as analyzed in the Phase 2 DEIS) to an average of 82 feet if the City grants PSE's proposed variance, or 95 feet if not. These efforts limit perceived impacts and minimize perceived magnitude of change. Neighboring properties will continue to have the same uses and circulation patterns that exist with the present transmission line. Additional information regarding pedestrian and vehicular circulation is addressed below in response to Decision Criteria E.

The DEIS concluded that the Project will not impact existing or future land use patterns (Phase 2 DEIS at 3.1-43). Indeed the use of existing utility corridors was a mitigation measure designed to minimize conversion of other land uses (Phase 1 DEIS at 1-36 and 1-38). Specifically addressing potential economic impacts to adjacent properties in Newcastle, both DEISs concluded that there will be no significant unavoidable adverse impact to economic resources resulting from the Project (Phase 2 DEIS at 1-31; Phase I DEIS at 10-21—22 (summarizing studies detailing economic impacts of transmission lines on housing values)). The DEISs analyzed impacts by assessing potential impacts to house values along the proposed transmission line route. The DEIS's finding of no significant impact is conservatively estimated, because the referenced studies contemplated the siting of *new* transmission lines, rather than transmission line upgrades where similar transmission lines already exist, as is the case here. The siting of new transmission lines where none previously existed is more impactful to adjacent uses than an upgrade to existing transmission lines because the value of homes adjacent to existing lines already account for the presence of utilities.

- C. *The conditional use is designed in a manner that is compatible with the physical characteristics of the subject property;*

Response: The Energize Eastside Project is designed to be compatible with the existing physical characteristics of the subject property, an existing utility corridor. The transmission line corridor is an existing utility corridor that was established in the late 1920s and early 1930s. The transmission line upgrade is proposed within the existing utility corridor; thus, it is compatible with the existing character of the subject property. PSE proposes to replace the existing 115 kV transmission poles with steel monopoles to accommodate 230 kV conductors. The replaced poles will generally be installed in the same location or in close proximity to the existing poles. In most cases, the number of poles will be reduced from two or three poles to one pole. The consistency of the proposed transmission lines upgrade with the subject property was confirmed by the Phase 2 DEIS, which found that impacts to land use will “be less-than-significant because [the proposed Project] is consistent with city plans, and would not adversely affect existing or future land use patterns.” (Phase 2 DEIS at 3.1-42). The Project will use the existing utility corridor and is compatible with the current land uses of the existing easements. *See also* Response to CUP Criteria A above.

The existing transmission lines are on a relatively flat ridge through the City except for the May Creek ravine. This topography causes poles and wires to be less visible in the forested ravine as compared to areas of the corridor with low vegetation along the ridgetop. This topographic and vegetation setting leads to a conclusion in the Phase 2 DEIS that there would be a significant change to aesthetic environment along the ridge (Phase 2 DEIS at 3.2-78) because, as originally proposed, the upgraded transmission lines raise pole height from 55 feet to 100 feet on average. To reduce pole height to the extent feasible, PSE is seeking a variance for approximately 10 poles. If granted, PSE's proposed average pole height is well below the height evaluated in the Phase I and Phase 2 DEISs (82 feet rather

than 100 feet). This reduction mitigates the significant aesthetic impacts identified in the Phase 2 DEIS to a level that is less than significant.

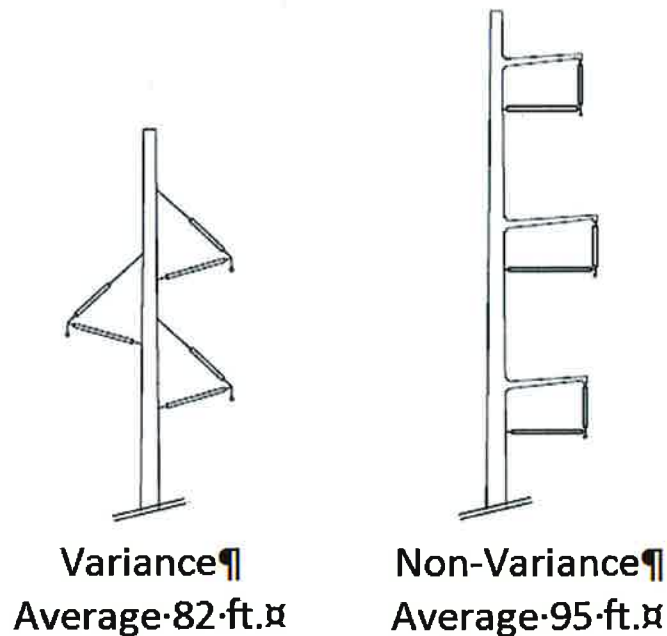
- D. Requested modifications to standards are limited to those which will mitigate impacts in a manner equal to or greater than the standards of this title;*

Response: PSE requests a modification (*i.e.*, variance) to the City's code interpretation of 5-foot setback standards for structures from utility property or easement lines delineating the boundary of regional utility corridors (NMC 18.12.130.C³) specifically to mitigate Project impacts. The code interpretation applies the regulation to electrical transmission towers, which forces them to be located 5 feet outside the co-located OPL easements and, as communicated to PSE, is not a requirement that in any way relates to a safety concern.

The boundary of OPL's easements and the location of the pipelines within the easements vary widely throughout the corridor, which makes it difficult to site poles under a non-variance scenario. In other words, a 5-foot setback from OPL's easement boundaries in no way dictates a consistent distance between a PSE transmission line pole and the pipeline. PSE hired third-party experts to independently assess appropriate pole placement relative to the pipelines to ensure that there are no safety concerns and to identify appropriate mitigation, when necessary.

Without a variance, most pole locations will have to be moved toward the outside of the corridor. In order to accommodate wire movement (primarily due to wind) the wires will be placed toward the middle of the corridor by putting them all on the same side of the poles. Since approximately 15 feet of separation between each wire is required, the poles heights would average 95 feet in the City. If a variance from the 5-foot easement setback is granted, PSE could move the poles away from the residences on either side of the corridor and place the wires on both sides of the poles. This would provide for greater wire separation due to the geometric configuration, thereby reducing the pole heights to around 82 feet (see figure 1) while still maintaining a suitable distance from the pipelines.

³The City's code reads: "All buildings and structures shall maintain a minimum distance of five feet from property or easement lines delineating the boundary of regional utility corridors, except for utility structures necessary to the operation of the utility corridor. (Ord. 2005-311 § 1; Ord. 45 § 1, 1994; Ord. 18 § 1, 1994)."



The DEIS identifies a significant aesthetic impact where poles were estimated to be 100-feet tall. PSE believes that the 5% reduction in pole height (on average) reduces aesthetic impacts to a level that is less than significant. The requested modification further mitigates potential impacts for visual aspects by reducing transmission line pole height 18% (from 100 feet to an average of 82 feet). Additionally, the requested modification allows for a greater separation between the poles and adjacent residences, which limits any potential future impact to permitted development. The shorter and smaller diameter poles and narrower spacing also reduces impacts to critical areas, including wetland and stream buffers. Thus, the requested variance provides a means of further mitigating impacts otherwise resulting from the City's code interpretation.

- E. *The conditional use is such that pedestrian and vehicular traffic associated with the use will not be hazardous or conflict with existing and anticipated traffic in the neighborhood;*

Response: The proposed transmission line upgrade in Newcastle is located within the existing utility corridor. The existing utility corridor largely traverses what is essentially a green belt with road crossings at Newcastle Way, SE 73rd Pl, SE 80th Way, SE 84th St., 129th Ave SE, SE 86th Pl, and SE May Creek Park Dr. Pedestrian and vehicular traffic associated with the construction and maintenance of the upgraded transmission line will be minimally disrupted and will be consistent with current conditions during operations.

Vehicular access to pole replacement sites will be off of existing roads and will utilize existing or constructed temporary access roads. A traffic control plan will be implemented to minimize vehicular traffic temporary impacts during construction. Pole installation typically requires 3–7 days each (within an approximate 2-month work window). Access to adjacent

land uses will be maintained. Trails along the Newcastle segment include the Waterline Trail, China Creek (proposed), Cross Town Trail, Olympus Trail, and May Creek Trail. Trail access will be limited in the vicinity of each set of poles during replacement during the 3-7 day pole installation period. Access may also be temporarily restricted as a safety precaution when wires are strung.

Mitigation of impacts to pedestrians during construction may include the following: avoiding construction during peak trail usage, providing alternative points of access and detours, 2-week advanced notification of temporary trail closures, and signage of temporary closures along trails or park entrances at least one week in advance of closures. Bicycle and pedestrian use of roads or sidewalks may be temporarily restricted while poles are replaced or wires strung along roads. During design, PSE has worked to locate poles near existing accessible routes to minimize impacts to traffic from Project construction. PSE will work to maintain access to roads and recreation sites while providing a safe working area for crews and the public. During individual pole replacements and wire stringing, the public may be temporarily inconvenienced by construction activities; however, impacts will be short in duration at each site and less than significant as concluded by the Phase 2 DEIS at 4.6-2 and 4.6-13. Mitigation of potential impacts could include “maintenance of traffic” plans that identify traffic control and detours to maintain mobility and safety for vehicular and non-motorized travelers and maintain access to properties (Phase 1 DEIS at 1-44).

- F. The conditional use will be supported by adequate public facilities or services and will not adversely affect public services to the surrounding area or conditions can be established to mitigate adverse impacts on such facilities. (Ord. 97-153 § 66; Ord. 97-153 § 38; Ord. 45 § 1, 1994; Ord. 18 § 1, 1994).*

Response: No new public facilities or services will be required to accommodate the upgraded lines.

Compliance with Utility Facility - Regional (NMC 18.44.52)

In addition to the decision criteria for a Conditional Use Permit, the Newcastle Municipal Code (NMC 18.44.52) requires compliance with the following criteria:

- A. *Alternative siting analysis:*** *Prior to submittal of the application for conditional use permit, the applicant shall identify a minimum of three alternative site options located within or outside Newcastle’s city limits that will meet the system needs for the proposed new or expanding utility facility. At least one of the alternative sites identified by the applicant shall be located in the land use district to be primarily served by the proposed utility facility – regional. The siting analysis shall include the following:*
- 1. Description of alternative sites.*
 - 2. Map of the location of the alternative sites in relation to residential zones within the city.*

3. *Description of which of the sites analyzed are considered practical or feasible alternatives by the applicant, and which of the sites analyzed are not considered practical or feasible, together with supporting information that justifies the conclusions reached. For sites located in a residential zone, the applicant shall:*
 - a. *Describe how the proposed utility facility – regional location is a consequence of needs or demands from customers located within the city or service area; and*
 - b. *Describe why the operational needs of the facility require locating the utility facility – regional at the proposed site.*
4. *Technology Considered for the Preferred Site Alternative. Upon submittal of the conditional use permit application required, the applicant shall:*
 - a. *Describe the range of technologies considered for the proposed utility facility – regional;*
 - b. *Describe how the proposed utility facility – regional provides reliability to customers served;*
 - c. *Describe components of the proposed utility facility – regional that relate to system reliability; and*
 - d. *Describe how the proposed utility facility – regional includes technology best suited to mitigate impacts on surrounding properties.*

Response: An Alternative Siting Analysis has been completed for the portion of the Project located in Newcastle. Please see the Alternative Siting Analysis in Appendix A (attached) for details addressing the requirements of this section.

- B. *Public Involvement:*** *A public involvement process expanded from that otherwise required by NMC Title 19 shall be required and shall be conducted and paid for by the applicant. The purpose of the public involvement process is to involve the persons within the zone of likely and foreseeable impacts, and to determine potential mitigation measures that would make siting of that utility facility – regional more acceptable.*
1. *The applicant shall propose an acceptable public involvement plan to be reviewed and approved by the community development director.*
 2. *The public involvement process shall be initiated within 45 days of the issuance of a notice of application.*
 3. *A public involvement process conducted prior to submittal of an application to the city may be considered to satisfy all or part of the public involvement process requirement at the discretion of the community development director.*

Response: Details of compliance with the City's Public Involvement Plan (PIP) criteria is provided in detail in the PIP (See Appendix A, Attachment E therein). The PIP includes PSE's outreach objectives, the activities that PSE has used to engage the Newcastle community since 2013, and future outreach events planned through Project construction. This PIP has and will continue to inform and involve the community with the goal of mitigating potential impacts from the transmission line upgrade.

- C. *Additional Criteria:*** *In addition to meeting the CUP decision criteria, the following criteria shall be used to make a determination on the application:*

1. *The impact of the utility facility – regional including the design and operation on the surrounding uses, the environment and the city has been minimized;*

Response: Over the past two years, Newcastle has worked with the city of Bellevue to conduct an environmental review of the Energize Eastside Project under the State Environmental Policy Act (SEPA). Through the environmental review process, the Project was evaluated for potential significant environmental impacts. The partner cities (including the cities of Bellevue, Newcastle, Renton, Kirkland, and Redmond) have identified Project effects and identified mitigation that minimizes, avoids or compensates for impacts. The SEPA process included a two-phase review: a Phase 1 DEIS evaluating the Energize Eastside Project on a programmatic basis, and a project-level Phase 2 DEIS that assesses potential Project impacts, including impacts in Newcastle. In Newcastle, the location of the transmission upgrade within the existing PSE 115 kV utility corridor minimizes or avoids impacts as compared to the siting of a new regional utility corridor elsewhere within the City. For more details on the alternative routes and approaches, see the Alternative Siting Analysis (Appendix A).

Elements of the environment that were evaluated in the Phase 1 DEIS and found to not be significantly impacted by the proposed Project and therefore not assessed in the Phase 2 DEIS include: earth, public services, utilities, transportation, and energy and natural resources. Of the elements examined in the Phase 2 DEIS, analysis concluded that there would be no significant unavoidable adverse impacts to water, plants and animals, scenic views, greenhouse gasses, historic and cultural resources, environmental health, economics, land use and housing, and noise given the Project design and breadth of regulations and industry standards that govern its construction, design, and operations.

Significant impacts in Newcastle were identified with respect to aesthetic impacts (largely a function of pole height). Through additional engineering, PSE has successfully first reduced the average height from 100 feet originally studied in the DEISs to 95 feet, and further reduced the average height to 82 feet if the variance is granted. These height reductions minimize impacts to aesthetics. A variance would result in use of poles with a smaller diameter and capable of being installed with direct embed construction techniques. Directly embedded poles have a smaller ground disturbance footprint compared to poles requiring foundations. Additionally, poles installed on foundations require over a month of added construction time when compared to directly embedded poles. The reduction in number of poles also minimizes reduces visual clutter.

Newcastle's policies encourage the use of utility corridors for non-motorized recreation, which will continue during and following Project construction. Phase 2, DEIS at 3.6-1. Potential recreational impacts from the Project were centered on areas outside of Newcastle; however, construction and maintenance effects on the City's recreational users are minimized by using the existing transmission line corridor, limiting vegetation

disturbance, restoring areas cleared for construction, and notifying the community in advance of and during work within or near recreational sites. PSE will also implement the following mitigation during the construction phase to minimize impacts to recreational resources: avoiding construction during peak trail usage, providing alternative points of access and detours, 2-week advanced notification of temporary trail closures, and signage of temporary closures along trails or park entrances at least one week in advance of closures.

- 2. The design, use, and operation of the utility facility – regional complies with applicable guidelines, rules, regulations or statutes adopted by state law, or any agency or jurisdiction with authority;*

Response: Performance requirements for an integrated transmission system are heavily regulated at both the federal and regional levels. PSE’s regulators include FERC, NERC and WECC (the Federal Energy Regulatory Commission, North American Electric Reliability Corporation and Western Electricity Coordinating Council, respectively). NERC is the regulatory authority certified by FERC to develop, monitor, and enforce federal reliability standards and WECC is the regional entity with authority over transmission in the western region.

NERC standards mandate that PSE undertake forecasting studies to determine if the system has sufficient capacity to meet expected loads now and in the future. When doing transmission planning studies, contingencies are simulated to determine if PSE’s electrical system meets mandatory NERC performance requirements⁴ for a given set of forecasted demand levels, generation configurations and levels, as well as in the event of multiple system component outages.

Federal regulations require that PSE proactively engage in appropriate safety and reliability planning irrespective of probabilities of events occurring. This conservative planning methodology is implemented to prevent large scale, cascading, transmission system blackouts like those that have occurred in recent history. Large-scale blackouts are costly and can threaten human health, particularly with respect to vulnerable populations. For example, the 2003 Northeast blackout affected 55 million people in the Northeast and Midwest regions of the United States and Canada.

The PSE transmission planning studies performed in 2013 and 2015 determined that thermal violations on transmission lines and transformer equipment could occur under foreseeable scenarios within the next few years. Thermal violations indicate that PSE’s electrical system lacks necessary capacity under a variety of scenarios involving several

⁴ The transmission planning standards that were in effect in 2012-2013 were: TPL-001-3, TPL-002-0b 2nd Rev (TPL-002-2b), TPL-003-0b 2nd Rev (TPL-003-2b), and TPL-004-2. TPL-001-3, TPL-002-2b, TPL-003-2b, and TPL-004-2 are being retired as they are replaced in their entirety by TPL-001-4. Enforcement of the new standards began January 1, 2015. Visit the NERC website at <http://www.nerc.com/pa/Stand/ReliabilityStandards/TPL-001-4.pdf> for more information.

component outage contingencies during periods of peak demand. To meet NERC standards, PSE must address the transmission system deficiency.

3. *The design, use and operation of the utility facility – regional complies with all applicable safety standards and engineering practices, including interactions with all other co-located utilities in regional corridors or facilities;*

Response: The Project incorporates National Electric Safety Code (NESC) 2012 and NERC/ FERC standards designed to minimize risk related to foreseeable hazards. These safety standards require increased separation between the three conductors necessary for each circuit when the voltage is increased from 115 kV to 230 kV. The need for increased conductor separation results in taller poles. Project poles are designed to meet minimum height standards to ensure compliance with required safety and design standards. As designed, the Project ensures effective functioning of the transmission lines during all operational conditions. During the SEPA environmental review process, specific analysis of electric and magnetic fields (EMF) and pipeline safety was also conducted. These independent, third party studies all conclude that the Project will have no significant adverse impacts (Phase 2 DEIS at 1-27 and 1-29).

Olympic Pipeline, is operated by BP Pipelines (North America) Inc. (BP), has co-located pipelines within the PSE's utility corridor where the transmission line upgrade is proposed. PSE and OPL are committed to environmental stewardship and maintaining the safety of its employees, contractors and the general public. The pipelines OPL operates transport various liquids at high pressure. Pipelines are regulated by the U.S. Department of Transportation and Office of Pipeline Safety, which provides guidelines and requirements for working near pipelines or within pipeline rights-of-way. For example, OPL requires a representative/inspector on site when any work is being performed within 10 feet of the pipeline(s) or if the reach of mechanized equipment is capable of extending within 10 feet of the pipeline(s). In preparation for the construction of the Project, PSE has been in close communication with OPL to ensure coordination during construction and operation of the Project. PSE has also coordinated with other utilities, including various telecommunications companies, Seattle Public Utilities and Sound Transit.

4. *When a proposed regional utility facility is being co-located with an existing utility facility, the applicant shall provide a copy of a complete application package to the existing utility provider for comment, and said comments shall be provided to the city;*

Response: As discussed under criteria 3 above, PSE has been in close communication with OPL to ensure coordination during construction and operation of the Energize Eastside Project (see Appendix B). PSE will provide a copy of the CUP application to OPL contemporaneously with submitting it to the City. A copy of OPL's response will be provided to the City once it is received.

5. *The applicant shall demonstrate that an operational need exists that requires the location or expansion at the proposed site;*

Response:

Operational Need. Five separate studies performed by four separate entities have confirmed the need to address Eastside transmission capacity (Bellevue LUC 20.20.255.E.4; D.3.b & c):

- Electrical Reliability Study by Exponent, 2012 (City of Bellevue);
- Eastside Needs Assessment Report by Quanta Services, 2013 (PSE);
- Supplemental Eastside Needs Assessment Report by Quanta Services, 2015 (PSE);
- Independent Technical Analysis by Utility Systems Efficiencies, Inc., 2015 (City of Bellevue); and
- Review Memo by Stantec Consulting Services Inc., 2015 (EIS consultant)

All of these studies are provided in the Alternative Siting Analysis (Appendix A). These studies were reviewed and confirmed by Jens Nedrud, Manager of System Planning, a WA State licensed engineer. See Appendix C (containing PSE’s Certification of Need).

PSE transmission planning studies demonstrate that, under certain contingencies, the delivery system on the Eastside could not continue to meet reliability requirements without significant infrastructure upgrades. The 2013 and 2015 Needs Assessment reports were performed pursuant to the mandatory federal transmission planning standards and identified four major areas of concern:

1. Overload of PSE facilities in the Eastside area. Studies identified potential overloading of transformers at Sammamish and Talbot Hill substations, and several 115 kV transmission lines routing power to the Eastside area are at risk of overloading under certain conditions.
2. Small margin of error to manage risks from inherent load forecast uncertainties. PSE’s planning studies rely in large part on load forecast data. Imbedded in PSE’s load forecasts are several factors that include elements of risk. These include conservation, weather and block loads.
 - Conservation: To date, PSE customers have achieved 100 percent of the company’s conservation goals, which are very aggressive within the industry. If 100 percent of conservation goals are not achieved, then the transmission system capacity will be surpassed sooner than expected.
 - Weather: PSE’s load forecast assumes “every other year” cold weather. (Some utilities take a more conservative approach, using the coldest and hottest weather in five or ten years, as inputs to system performance studies).⁵ If the region experiences weather extremes outside of those used in PSE’s

⁵ For example, ISO-NE plans to a 90/10 or one in ten year weather forecast.

planning studies, electricity demand will surpass the transmission system capacity sooner than expected.

- Block loads: These include large development projects that add significant load to the system. If block load growth increases more than anticipated, demand for electricity will surpass the transmission capacity sooner than expected.

3. Increased use and expansion of Corrective Action Plans (CAPs) to keep the system compliant. CAPs are a series of operational steps used to prevent system overloads or loss of customers' power. They are a short-term fix to alleviate potential operational conditions that could put the entire grid at risk. They protect against large-scale, cascading power outages; however, they can put large numbers of customers at increased risk of power outages. For example, to prevent winter overloads on the Talbot Hill transformer banks, PSE is already using CAPs, which increases outage risk to customers. As growth continues, additional CAPs will be needed. By Federal standards, CAPs are not intended to be long-term solutions to system deficiencies.
4. Impacts to interconnections identified by ColumbiaGrid. Though the need for Energize Eastside is driven by local demand, because the electric system is interconnected for the benefit of all, it is a federal requirement to study all electric transmission projects to ensure there are no material adverse impacts to the reliability or operating characteristics of PSE's or any surrounding utilities' electric systems. ColumbiaGrid, the regional planning entity, produces a Biennial Transmission Expansion Plan that addresses system needs in the Pacific Northwest, including the PSE system.

PSE's 2015 Supplemental Needs Assessment Report confirmed the winter deficit findings in the 2013 Needs Assessment Report, stating that:

*By winter of 2017-18, there is a transmission capacity deficiency on the Eastside that impacts PSE customers and communities in and around Kirkland, Redmond, Bellevue, Issaquah, Newcastle, and Renton along with Clyde Hill, Medina, and Mercer Island... **By winter of 2019-20, at an Eastside load level of approximately 706 MW, additional CAPs are required that will put approximately 63,200 Eastside customers at risk of outages.***

The 2015 Needs Assessment also confirmed that by summer of 2018, there would be a transmission capacity deficiency on the Eastside that impacts PSE customers and communities in and around Kirkland, Redmond, Renton, Bellevue, Issaquah and Newcastle along with Clyde Hill, Medina and Mercer Island. **By summer of 2018, CAPs will be required to manage overloads under certain N-1-1 contingencies, and the use of these CAPs will place approximately 68,800 customers at risk and could require 74 MW of load shedding, affecting approximately 10,900 customers at a time.**

Based on the 2015 Needs assessment, if the Energize Eastside Project gets delayed until after the summer of 2018, load shedding may be used as a CAP to meet the mandatory reliability requirements defined by NERC. This could result in PSE having to turn the power off to tens of thousands of customers under certain forecasted conditions and which would be necessary to prevent more widespread outages beyond the Eastside area. To further study this, in 2015 PSE commissioned Nexant to simulate three scenarios of rotating outages that could be needed if no action is taken to upgrade the Eastside's transmission system. Nexant's Energize Eastside Outage Cost Study determined that if PSE must use corrective action plans that include rolling blackouts, more than 130,000 customers could be impacted as early as the summer of 2018, at a cost of tens of millions of dollars to the local economy.

Load shedding is not a practice that PSE or many other responsible utilities use (unless absolutely necessary). Since load shedding adversely impacts residential, commercial and industrial customers, and surrounding cities, towns and neighboring communities, it is both necessary and good utility practice to coordinate with cities, towns, municipal officials and emergency services, and to publicly inform those who would be affected by this practice. The likely need for additional 230 kV capacity in the Eastside region was originally identified in 1993 and has been included thereafter in PSE's Electrical Facilities Plan for King County ("Plan"). As explained in the Plan, "[t]he 230 kV sources for the 115 kV system in northeast King County are primarily the Sammamish and Talbot Hill substation. The loads on the 230-115 kV transformers in these stations will be high enough to require new sources of transformation." Additionally, the "Lakeside 230 kV Substation project [now referred to as Energize Eastside] will rebuild two existing 115 kV lines to 230 kV between Sammamish and Lakeside [where PSE proposes the construction of the Richards Creek substation], and between Lakeside and Talbot Hill."

Siting. Electricity is provided to Newcastle via an interconnected grid system, with the primary sources coming from the Sammamish and Talbot Hill substations where 115 kV power is sent over the existing two 115 kV transmission lines to PSE's Lakeside switching station in Bellevue. From the Lakeside switching station, electricity is transmitted to the numerous distribution substation in the Eastside area, including those that serve Newcastle. All of the electricity provided to the City is currently transmitted over the existing 115 kV transmission lines that are being proposed to be rebuilt as part of the Project.

Using the existing transmission line corridor within the City provides the shortest path (i.e., minimizes impacts) between the Bellevue segment to the north and the King County segment to the south. Operationally, replacing the existing 115 kV lines with 230 kV lines utilizes an existing corridor without the need for creating a new one through areas lacking transmission lines today. Additional information on the Project need is provided below in response to Criteria 6. This information is comprehensive for the Energize Eastside Project, for which the Newcastle segment is a fundamental part.

6. *The applicant shall demonstrate that the proposed utility facility – regional improves reliability to the customers served and reliability of the system as a whole, as certified by the applicant’s licensed engineer;*

Response: Independent experts agree that the Project is needed to address deficiencies in system reliability. Bellevue contracted with Utility System Efficiencies, Inc. (USE) to perform an independent technical analysis (ITA) of the purpose, need and timing of the Energize Eastside Project, and this study confirmed the capacity deficiency in the Eastside area. The ITA was performed to verify the Project need and PSE’s study methods, as these were questioned by a local public opposition group.

The ITA concluded that “PSE used reasonable methods to develop its forecast showing the Eastside area growing at a higher level [faster pace] than the county or system level”. Additionally, the ITA addressed common questions about the Project, including:

- Is the Energize Eastside Project needed to address the reliability of the electric grid on the Eastside? **The ITA determined, “YES.”**
- If the load growth rate was reduced, would the Project still be needed? **The ITA determined, “YES.”**
- If generation was increased in the Puget Sound area, would the project still be needed? **The ITA determined, “YES.”**
- Is there a need for the Project to address regional flows, with imports/exports to Canada? **The ITA determined that by modeling zero flow to Canada, the Project is still necessary to address local need.**

7. *The proposal considers possible mitigation measures that can be developed which would make siting the utility facility – regional within the community more acceptable.*

Response: The SEPA Phase 1 and Phase 2 DEISs identified limited unavoidable significant adverse impacts to aesthetics. PSE is committed to implementing avoidance, minimization, and mitigation measures identified through the SEPA review process where feasible to avoid and address any significant adverse impacts. Accordingly, PSE is requesting a variance from NMC 18.12.130.C to facilitate shorter poles that minimize impacts to visual resources as described in CUP Decision Criterion D (above). PSE is also committed to fully complying with all mitigation required in the City’s code and permit conditions. Specifically, PSE will mitigate those impacts identified in the Critical Areas Report, as well as tree impacts that are necessary to meet federal transmission line operational standards. To mitigate for loss of significant trees in the transmission corridor, PSE is proposing mitigation ratios that meet or exceed regulatory standards. PSE will work with affected property owners, the City, and other stakeholders to replace trees in the most effective manner that meets the permit conditions. Where individual property owners decline to have new trees planted onsite, PSE will work with the City to place additional

trees offsite. Mitigation specifics are presented in the associated Critical Areas Report (provided under separate cover).

- D. *Mitigation:*** *The city may impose conditions relating to the location, development, design, use, or operation of a utility facility – regional to mitigate environmental, public safety, or other identifiable impacts. Mitigation measures may include, but are not limited to, natural features that may serve as buffers, or other site design elements such as fencing and site landscaping.*

Response: PSE is committed to addressing the City’s concerns about the Project and working with the City to mitigate identifiable impacts. See Additional Criteria C, part 1 and 7 above for more details on mitigation.

- E. *Independent technical review:*** *The city may require the applicant pay for independent technical review by a consultant retained by the city for review of materials submitted by the applicant to demonstrate compliance with the requirements of the alternative siting analysis, conditional use criteria, and decision criteria for utility facility – regional in this section. Based on such independent technical review, the director may recommend and the hearing examiner may impose conditions to address and mitigate the regional utility facilities’ impacts to the city, including but not limited to public safety, aesthetics, landscaping and tree removal. The authority to require mitigation includes, but is not limited to, requiring setbacks from other utility facility – regional or land uses as may be determined necessary for public safety. (Ord. 2016-541 § 2 (Exh. 1)).*

Response: The Energize Eastside Project has been the subject of rigorous, independent technical reviews. There are more than numerous independent peer reviews and PSE-led technical reports available at <http://www.energizeeastsideeis.org/library.html>. To date, Newcastle has not indicated the need for an additional independent technical review.